The environmental impact of using social networks in election campaigns

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Abstract. Social media are a virtual reality to which many fields, such as politics, have had to adapt. These new media serve both political parties and voters, who now have easy and instant access to political information. We are therefore particularly interested in the communication of Moroccan political parties during the 2021 legislative elections. Through our study, we wanted to find out: what impact does the use of social networks in electoral campaigns have on the environment? We're interested in the environmental aspect because election campaigns have always used leaflets and flyers as a means of communication, to the great detriment of the environment. This is also the case in Morocco. During the last legislative elections, despite the health crisis and the decision by public authorities to limit or even ban leaflet distribution in certain provinces, the streets were littered with paper. To answer our research question, we conducted a quantitative study covering the last legislative elections. Our study showed that political parties can run election campaigns without using leaflets, since our sample claimed to have followed these campaigns mainly through social networks. Also, the political party that won the elections was the one with the strongest digital footprint. Therefore, to limit the impact of election campaigns on the environment, it's important to turn to digital, for a paperless approach that serves the goals of sustainable development.

Index Terms — Citizens, elections, electoral campaigns, environment, Morocco, political communication, social networks.

1. Introduction

In the days of modern representative democracy, the mass media were the main vehicles for political communication during election campaigns [1]. These classic tools have now been joined by social media [2]. These new media have revolutionized the way citizens around the world live. In fact, they have given rise to a new virtual reality. Many fields, such as politics, have had to adapt to this new reality [3]. Political information now circulates on social networking platforms, with a view to helping voters make decisions during the election

period. Indeed, these days, politics can no longer be considered or understood outside the digital space. Social networks enable voters to find out more about the candidates running for office, their programs and proposals, and their post-election activities [4]. Indeed, this is what has prompted political parties to adopt social networks as part of their communications strategy [5]. In today's interconnected world, election campaigns are now conducted on social networks too [6], and political participants need to be as present as possible in this virtual space [4]. The ease of participation and interaction enabled by social networks has made them a preferred medium for political communication. They are even used as a space to discuss the major political issues affecting society [7]. The study of the impact of social networks is not new. Since 2010, many fields have been interested in the study of social networks and their influence [8].

In Morocco, this digital culture incorporated into politics began to take hold gradually, particularly during the COVID-19 period. Political and public parties had to invest in social networking platforms, in order to communicate with connected citizens in real time. The first barometer of the Observatory of Digital Public Opinions released in June 2020 showed that the digital footprint of the main ministries and political parties increased during the health crisis [9]. It then seemed appropriate to ask ourselves as a fundamental research question; what impact does the use of social networks in electoral campaigns have on the environment? especially since print is used extensively during the election period. In Morocco, the distribution of leaflets and flyers is a common practice, which negatively affect the environment. Indeed, the impact of paper on the environment is non-negligible. Paper production generates harmful gases that pollute the environment and contribute to global warming. Plus, this industry contributes to deforestation; a considerable number of trees are used every year in the paper industry [10].

The goal of our research is to study the place occupied by digital, compared to print, in the election campaigns of Moroccan political parties. In addition, the study aims to deduce the impact of social networks use during elections on the environment. To achieve our objective, a quantitative survey was conducted via an online questionnaire.

Integrating the environmental dimension is a plus for our research. It's an important aspect, inseparable from current societal and political issues. Our research thus reconciles elections and the environment, in order to understand how it is possible to reduce the impact of electoral campaigns on the environment.

1.1. Article maps

Our article is divided into 7 main sections. After starting with an introduction, we will give the selected methodology, then tackle the results we have drawn from the quantitative survey. Afterwards, we will discuss these results in order to answer our research question. From this discussion will be proposed the future work and the conclusion, and then we finish with the list of references.

2. Methodology

To answer our research question, we conducted a quantitative survey, using an online questionnaire. We chose a quantitative survey because we needed to ask our sample mainly closed-ended and multiple-choice questions.

2.1. Data collecte

To answer our research question, we began by collecting data. The survey was launched on social networks, mainly Facebook. The survey launched during March 2023 covers the last legislative elections of 2021.

We used Sphinx survey software to create this questionnaire. We chose Sphinx over Google forms because of its advantages. On one hand, Sphinx is more precise in the organization of questions. Questions are not displayed all at once, as in Google forms, but we can choose when a question is displayed, depending on the answer to the previous question. This makes the questionnaire more entertaining and organized. On another hand, Sphinx generates automatic data analysis.

Our questionnaire consists of 14 questions, mainly closed-ended and multiple-choice questions. The open-ended questions were used to justify the participants' answers.

This questionnaire enabled us to gather sufficient responses to conduct a relevant quantitative study. Since our study concerns social networks, our sample consisted solely of users of these platforms. The average age of our participants was 30. We also targeted participants from both big cities and small towns. Here's what emerges from the socio-demographic results of our survey (**Fig. 1 and 2**).

Fig. 1. Percentage of participants by gender.

Fig. 2. Demographic background of participants.

For the purposes of our study, we will only present the most important questions from the electronic questionnaire. Our questions have been designed to build up to a crescendo.

- Question 1: Have you followed the election campaigns of political parties during the 2021 general elections?
- Question 2: By what means did you follow these election campaigns?
- Question 3: Which social network(s) did you use to follow these election campaigns?
- Question 4: Which parties' election campaigns did you follow on social networks?
- Question 5: Which political parties' digital election campaigns did you enjoy?

To avoid propaganda, we've replaced the names of the political parties with the variables x1, x2, x3....x8.

2.2. Data analysis

For the presentation of our data, we have chosen the visme.co platform, in order to present our data in the form of customized graphs and illustrations.

In response to the first question about our participants' interest in parliamentary elections, 67% said they had followed the election campaigns during the last 2021 elections, and 33% answered "no" (**Fig. 3**).
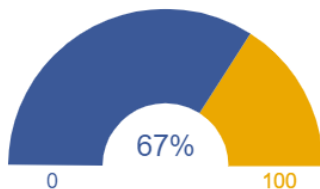
Fig. 3. Percentage of campaign monitoring.

The second question was multiple choice. We gave our participants the choice of selecting one or more answers from among the following proposals:

- TV
- Radio
- Print (posters, leaflets, flyers, newspapers…)
- Social networks
- Other

Social networks top the list. 44% of respondents followed election campaigns via digital media. The second channel was television with a percentage of 32%, followed by print with a percentage of 14%, then radio with 10% (**Fig. 4**).
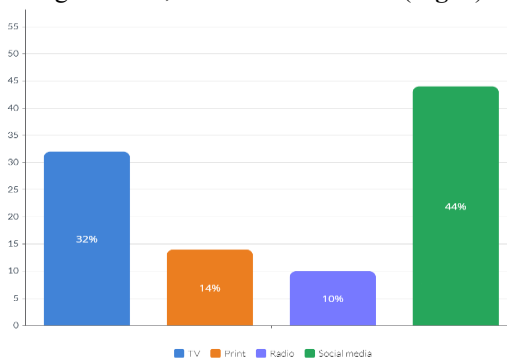

Fig. 4. Percentage of each medium used
to monitor election campaigns.

For those who chose social networks, we asked them to select the social network(s) they used to follow the election campaigns.

The social network that was used the most was Facebook, with a percentage of 59%, followed by Instagram with a percentage of 26%. In addition, 10% of participants used Twitter, and only 5% used Youtube (**Fig. 5**).
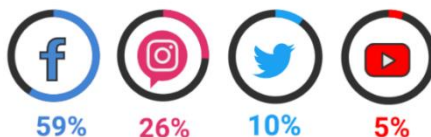

Fig. 5. Percentage of each social network used by
participants to follow election campaigns.

In the fourth question, we asked participants who followed the election campaigns by social networks, which political party or parties they followed. This question enabled

us to identify which political parties were present on social networks. This question is interdependent with the fifth question. This is why we propose this reading of the results (**Fig. 6 and 7**).
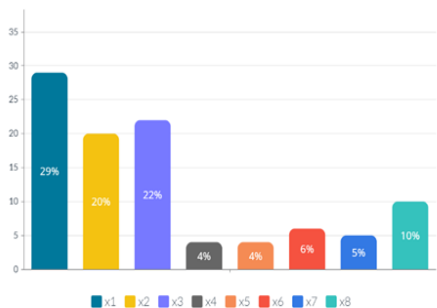

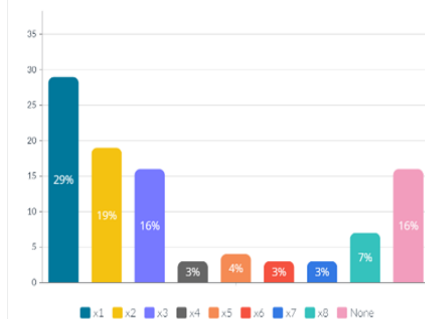**Fig. 6.** Percentage of participants following each political party.

Fig. 7. Percentage of participants' appreciation of each political party.

- The first party (x1) was followed by 29% of our participants. The same percentage said they enjoyed their election campaign;
- The second party (x2) was followed by 20% of participants, and appreciated by 19%;
- 22% of participants followed the party x3 on social networks, and 16% appreciated its digital campaign;
- 4% of participants followed the election campaign of party x4 on social networks, and 3% liked it;
- For party x5, 4% of participants followed its campaign and 4% liked it;
- For party x6, 6% of respondents followed its campaign and 3% liked it;
- 5% of participants followed party x7's election campaign, and 3% liked it;
- Party x8's election campaign was followed by 10% of participants, and appreciated by 7%;
- 16% of participants said they did not like any of the election campaigns.

3. Results

For the first question, we can see that a significant percentage of our respondents have followed election campaigns. Indeed, these days, information has become very accessible, particularly thanks to social media. We may not be interested in elections, but we can still follow political news through electronic media pages on social networks, to name but a few.

In the second and third questions, we can see that the main medium used by our participants to follow election campaigns is social networks, and more specifically in Facebook. Print comes in the third place. This can be explained by the fact that social networks have become a vector of information. They have dethroned traditional media and facilitated access to information thanks to their speed and immediacy. Additionally, citizens are increasingly connected, especially with the democratization of the Internet. We can find the statistics at Datareportal, a website that offers reports and data on digital trends, digital usage, and social media for over 230 countries and territories worldwide. In its report on digital trends in

Morocco in 2023, released on February 13 of that year, Datareportal counted 21.30 million social media users in January, representing 56.6% of the population [11].

For the fourth and fifth questions, the election campaigns of parties x1 and x5 were the only ones to be appreciated by the same percentage of participants who followed them. For the other political parties, the percentage of voters who appreciated their campaigns decreased in relation to the percentage of followers. Thus, these political parties were able to integrate social networks into their election campaigns, but their digital strategy was not sufficiently attractive to attract and seduce all the Internet users who followed them. It was this difference in percentage that gave us the 9th answer: no party.

Our interest was directed to the x1 party, since it won the parliamentary elections. If its campaign was appreciated by the Internet users who followed it, it's because of its digital strategy, initiated even before the official launch of election campaigns. Indeed, while other political parties have chosen to outsource their digital campaigns to communications firms, the x1 party distinguished itself by setting up its own young digital team in 2017, to initiate political marketing work that enabled it to prepare for the elections in advance [12].

The fact that our participants and political parties are familiar with social networks means that the use of these new media in election campaigns can have an impact on the environment, by limiting the use of paper. We'll take a closer look at this solution in the next section.

Fig. 8. Street littered with leaflets.

4. Discussion

Our study has shown that social networks have not only enabled voters to follow election campaigns, but have also been a means of communication for political parties. The literature confirms that we can't dissociate politics from social networks nowadays. Election campaigns are also taking over the digital space. This prompted us to consider the environmental impact of using social networks in election campaigns, especially since some Moroccan media and Internet users deplored the pollution caused by leaflet distribution during the last legislative elections.

Covid-19 has forced Moroccan political parties to stop using certain practices that were very common during election campaigns, such as door-to-door canvassing, which has been replaced by dematerialized marketing via social networks. However, some unfortunate practices have endured, such as leaflet distribution. Indeed, during the last election campaigns, despite the public authorities' ban on the distribution of election leaflets and brochures as a health measure, the streets and boulevards were littered with paper, as can be seen in Fig. 8

For printers, this decision came late, as they had already prepared for the printing of the various orders. According to the Moroccan Printing Trades Group, over 1,000 tonnes of paper had been stockpiled in various regions of Morocco. The printers said they had already printed half of their stock, with the logos of the political parties. The remaining half cannot be used for other purposes, as the type of paper stocked is only used for flyers and tracts [13]. This unexpected decision also forced candidates to readjust their election campaigns, especially as some of them had already printed their election brochures before the campaigns launch.

However, some provinces were allowed to distribute leaflets, under sanitary measures. Indeed, as reported by the Moroccan media outlet l'Opinion, some candidates claimed that local authorities had allowed them to distribute what is considered "campaign material", on condition to do so on a small scale, and under sanitary measures [14].

Given this situation, political parties have had to integrate digital into their communications. From the results of our survey, we have deduced that the main political parties have been present on social networks. To support our findings, we can refer to the study carried out in 2021 by the Observatory of Digital Public Opinion, concerning the digital footprint of two political parties with the strongest digital presence, including the x1 party. The aim of the study was to see whether digital influences election results. The Observatory found that during election campaigns, the main political parties amplified their digital presence. Party x1 had the strongest digital footprint. At the end of its study, the Observatory concluded that social media improve the rate of citizen participation in political and public life [15]. In fact, despite the pandemic crisis, the participation rate in the legislative, regional, and local elections was 50.18%, which was 7 points higher than in the previous elections [16].

The results of our survey and the data from the Observatory show that it's time to stop using paper in election campaigns. This will allow to protect the environment and to meet the objectives of sustainable development, especially as the use of social networks becomes more and more democratized. Indeed, our participants mainly used social networks to follow election campaigns. In addition, printing leaflets and brochures requires a considerable amount of paper. In the end, all this printed paper ends up littering the streets. Thus, banning the distribution of leaflets should be seen as an environmental measure to limit the damage caused by election campaigns, especially as social networks are an asset for political parties. They enable candidates to work on their image, as part of political marketing. A smart digital communications strategy will enable candidates to boost their profile and stay close to their voters, while limiting their impact on the environment, thanks to a paperless approach.

At the end of this study, we can also note that the methodology used enabled us to achieve the objectives set at the outset and answer our research question. The studies and data included in this work support the research' results. However, the study limitation is not including the category of the population unfamiliar with social networks, and therefore does not necessarily consider them as a medium for political information. This new parameter could provide us with another research perspective.

5. Future work

Our paper presents the beginnings of a more elaborate study of the impact of election campaigns on the environment. We have focused our research on the use of paper, but it would be interesting to explore in future work other common practices during the election period that have an impact on the environment, beyond the distribution of leaflets and flyers.

6. Conclusion

The use of social networks has exceeded traditional media. These new media have become a vector for political information. On one hand, they enable political parties to communicate with their targets and amplify the reach of their messages. On the other hand, they allow voters to access political information in real time. In Morocco, the health crisis has made political and public participants aware of the importance of adopting digital communication.

Indeed, the digital footprint of the main public and political participants increased during the health crisis.

Aware of the polluting nature of certain communication media during election campaigns, such as print, we asked the question: what impact does the use of social networks in election campaigns have on the environment? During the last legislative elections, leaflets were, as usual, littering the streets, despite the public authorities' decision to ban leaflet distribution in certain provinces, and to authorize it in others under certain sanitary measures. The results of the quantitative survey and the data integrated showed that it is possible to eliminate paper use, since our sample followed the election campaigns mainly through social networks, and the political party that won the legislative elections was the one that distinguished itself by its digital strategy, initiated well before the start of the campaigns, and which enabled it to record the strongest digital footprint during the election campaigns.

The use of digital technology should be seen as an environmental measure to be considered during general elections, in order to limit the environmental damage caused by election campaigns.

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